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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,005	12/31/2001	In San Jeon	51876P290	7498

8791 7590 03/22/2005

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EXAMINER

ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/039,005

Applicant(s)

JEON ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 21-23 is/are allowed.
6) ☒ Claim(s) 13-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Final office action

Response to the applicant's amendments

a) Applicant's argument (see remark pages 1-7) filed 03/04/05, have been fully considered and are persuasive. Therefore, the previous final rejection has been withdrawn in response to the amendment filed on 03/04/05. However, upon further consideration, a new ground(s) of rejection is made under 101, non-statutory rejection to claims 13-20. The examiner would like to point out that this action is made final.

Specification

b) The amended or substituted specification was received on 03/04/05. The specification is accepted.

Claim Rejections – 35 USC § 112(1st)

c) The cancelled claims (1-5 and 7-12) has changed in overcoming the rejection under USC 112, 1st paragraph.

1. Claims **1-5 and 7-12** are cancelled.
2. New claims **13-23** are added and presented for examination.

Claim Rejections - 35 USC § 101, Non Statutory

3. Claims **13-20** are rejected under 35 U.S.C. 101 because the claimed invention is directed to **non-statutory** subject matter because: the claimed invention is directed to non-statutory subject matter.

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Claims 13 and 15 are non-statutory since all of the steps of the log likelihood ratio L_k in claims 13 and 15 raises a question as to whether the claims are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claims 14 and 16-20, which are directly or indirectly dependents of claims 13 and 15 are also rejected under 35 U.S.C. 101.

Allowable subject matter

4. Claims 13-20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action. (Please, see claim examples in MPEP 2106 to overcome the 101, non-statutory rejection).

Examiner's statement for reason for allowance

The following is an examiner's statement for allowance:

5. Claims **21-23** have been allowed.

As per claim **21**, the prior art (Lerzer) teaches or discloses an error correction codes using maximum a posteriori (MAP) decoding technique (see col. 1, lines 15-17). Lerzer in figure 6 teaches a branch metric calculation unit (BTMC) (22) for calculating branch metric calculation and for receiving symbols (see the inputs coupled to the BTMC unit), a state metric calculation unit (RSMC) (82) for calculating a reverse state metric and storing the branch metric in a storage unit (RSM) (38), and a log likelihood ratio calculation unit (LRC) (28) for calculating likelihood

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ratio by receiving the forward state metric and reading the reverse state metric saved at the storage unit (38). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious storing log likelihood ratio wherein the log likelihood ratio L_k is calculated by using an equation (as in wherein the log likelihood ratio L_k is calculated by using an equation (see the equation) wherein m is a state of a trellis diagram; k is a stage; j is a $(k-1)^{th}$ input for a reverse state metric; $s(m)$ is a function provides binary number of m with a most significant bit complemented [emphasis added]. Consequently, claim 21 is allowed over the prior art.

Claims **22 and 23**, which is/are directly or indirectly dependent/s of claim 21 are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Esaw Abraham

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